REMARKS

The present document is submitted in reply to the Office Action dated March 14, 2008 ("Office Action").

Applicants have amended claims 20 and 23 to promote clarity. Support for the amendments can be found, e.g., in FIG. 1. Further, they have cancelled claims 1-10 and 21. Note that claims 11-15 were cancelled previously.

Upon entry of the present amendments, claims 16-20 and 22-25 will be pending and under examination. Applicants respectfully request that the Examiner reconsider this application in view of the following remarks.

Rejections under 35 U.S.C. § 112, Second Paragraph

The Examiner rejects claims 20 and 21 on the ground that these two claims improperly depend from claim 16, which is directed to a kit. More specifically, the Examiner holds the position that "thromboxane B2," required by claim 20, and "urine sample," required by claim 21, are an analyte and a sample respectively to be examined by the kit of claim 16; neither is a component of that kit. See the Office Action, page 4, section 4.

Applicants have amended claim 20 to clarify that this claim requires "an antibody specific to thromboxane B2" and cancelled claim 21, thereby rendering the Examiner's ground for rejection moot.

The Examiner also deems claim 23 vague, contending that "it is unclear how the level of creatinine relates to thromoboxane B2." See the Office Action, page 4, fourth paragraph.

For the sole purpose of facilitating prosecution, Applicants have amended claim 23 to make it clear that the terms "less than 15.1 ng/mmol creatinine," "15.1-21.8 ng/mmol creatinine," "21.9-33.8 ng/mmol creatinine," and "higher than 33.8 ng/mmol creatinine" refer to four levels of urinary 11-dehydro thromboxane B2 ("11-dTXB2"). Routinely, the level of urinary 11-dTXB2 is normalized to the amount of urinary creatinine. See Baltzer et al., American J. Veterinary Res., 67:78-83 (2006); copy

of the abstract attached hereto as Exhibit A.[1] In other words, the level of urinary 11-dTXB2 is commonly indicated as 11-dTXB2-to-Cr ratio (Cr standing for urinary creatinine), e.g., ng (11-dTXB2)/mmol creatinine as recited in claim 23. This is how the level of creatinine relates to 11-dTXB2.

It is respectfully submitted that claim 23, as amended, is definite.

Rejections under 35 U.S.C. § 102

Claims 16, 17, and 19 are rejected for anticipation by Clemmons, US Patent 5,030,555 ("Clemmons").

Claim 16 covers an immunoassay kit containing at least **two strips**. The first strip includes a test patch, to which an antibody is attached, and the second strip is made of an absorbent material for absorbing a test sample. This claim also requires that the antibody be linked to a reporter molecule (i.e., labeled) and its amount be predetermined.

As correctly pointed out by the Examiner, Clemmons discloses a "dip-stick" type serodiagnostic device. See the Office Action, page 5, second paragraph; and Clemmons, column 8, lines 50-54. Applicants would like to bring to the Examiner's attention that the Clemmons dip-stick device contains only **one strip**, on which a plurality of test pads are located. See FIG. 10. This **one-strip** dip-stick device is different from the kit of claim 16, which contains at least **two strips**.

In addition to strip numbers, the Clemmons dip-stick device and the claimed kit differ in at least another aspect. Namely, each test pad in the Clemmons device includes **two antibodies** specific to a test antigen while the test patch in the claimed kit includes only **one antibody** specific to a test antigen.

According to Clemmons, each test pad in the dip-stick device includes a porous membrane, on which **an antibody** is absorbed, and a matrix, which contains **another antibody** that is unbound and labeled. See column 8, line 63 through column 9, line 8; and FIG. 12. Clemmons also teaches that these two antibodies can form a sandwich-type complex with an antigen to be tested (see FIG. 13), indicating that they have the same

[1] Applicants do not have access to the full text of this reference. However, its abstract, in particular, "Procedure" section, is sufficient to support the routine practice noted above.

antigen specificity. Taken together, the dip-stick device disclosed in Clemmons includes test pads each containing **two antibodies** specific to the same test antigen.

The kit of claim 16 is designed to qualify a test antigen in a sample using **a labeled and amount-predetermined antibody**. This antibody is attached to the test patch in the first strip. Claim 16 also requires that, when contacting a test antigen-containing sample absorbed in the second strip, the antibody molecules bound to the antigen move from the first strip to the second strip and the antibody molecules unbound to the antigen remain on the first strip. Thus, the level of the remaining antibody is inversely proportional to the amount of the test antigen in the sample. In view of these teachings, a skilled person in the art would have readily known that the test patch in the kit of claim 16 **CANNOT** include a second antibody specific to the same test antigen, as such an antibody would compete against the **labeled and amount-predetermined antibody** for binding to the antigen; thereby defeating the intended utility of the claimed kit. Thus, unlike the Clemmons dip-stick device, which includes test pads each containing **two antibodies** specific to the antigen to be tested, the claimed kit include a test patch containing only **one antibody** specific to the test antigen.

Given the above-discussed two differences between the Clemmons dip-stick device and the kit of claim 16, Applicants submit that Clemmons does not anticipate claim 16. Nor does it anticipate claims 17 and 19, both dependent from claim 16.

Rejections under 35 U.S.C. § 103

The Examiner rejects claims 16-25 for obviousness on three grounds. See the Office Action, page 5, last paragraph through page 7, last paragraph. Applicants address below these three grounds separately.

I

Claims 16, 17, and 19 are rejected as obvious over Clemmons. See the Office Action, page 5, last paragraph. Applicants respectfully disagree.

As discussed above, the kit of claim 16 includes a test patch containing only **one antibody** specific to a test antigen, while the Clemmons dip-stick device includes test pads each containing **two antibodies** specific to the same test antigen. In the test pad of

the dip-stick device, one antibody is **bound** to a porous membrane ("first antibody") and the other antibody, contained in a matrix, is **labeled and unbound** ("second antibody"). See column 8, line 63 through column 9, line 8. According to Clemmons, when the matrix absorbs a fluid sample containing a test antigen, the antigen binds to both antibodies to form a first antibody-antigen-second antibody complex. See column 9, lines 21-34; and FIG 13. In this process, the second antibody included in this complex is immobilized onto the porous membrane via its interaction with the antigen and, in turn, the bound first antibody. The level of the signal released from the immobilized second antibody, which is labeled, indicates the amount of the test antigen in the fluid sample. See column 9, lines 34-41 and FIGs 14 and 15. In view of these teachings, a skilled person in the art would have readily known that the Clemmons dip-stick device requires both the first antibody and the second antibody, contained in one test pad, for quantifing the amount of a test antigen in a sample. In other words, he or she would not have been motivated to exclude one of the two antibodies from the dip-stick device to reach the kit of claim 16, as absence of either antibody would render the device useless. Put differently, given how the dip-stick disclosed in Clemmons works as discussed above, this reference indeed teaches away from leaving out any of the two antibodies included in each of its test pads to reach claim 16.

For the reasons set forth above, Clemmons does not render obvious claim 16 and its dependent claims 17 and 19.

II

Claims 20-23 and 25, all dependent from claim 16, are rejected as obvious over Clemmons in view of Reinke et al. ("Reinke"). See the Office Action, pages 6-7, section 8.

As pointed out above, Clemmons teaches away from using one antibody, instead of two, in each of the test pads of the dip-stick device disclosed therein, to reach the kit covered by claim 16. Reinke, according to the Examiner, teaches detecting thromboxane B2, a limitation of claims 20-23 and 25. This reference has nothing to do with the two-

strip kit of claim 16. Applicants thus submit that claim 16 is not obvious over Clemmons in view of Reinke. Nor are claims 20-23 and 25, all of which depend from claim 16.

III

Claims 18 and 24 are rejected for obviousness over Clemmons in view of Reinke and Guire, US Patent 4,826,759 ("Guire"). See the Office Action, page 7, section 9.

Applicants have pointed out above that Clemmons and Reinke, either taken alone or in combination, do not render obvious claim 16, from which claims 18 and 24 depend. Guire is relied on by the Examiner solely for disclosing a limitation of claims 18 and 24, i.e., "wherein the reporter molecule is dye or enzyme." See the Office Action, page 7, third paragraph. Clearly, the Examiner does not view it as suggesting the two-strip kit of claim 16.[2] It is therefore submitted that claim 16 is not obvious over Clemmons in view of Reinke and Guire. Nor do claims 18 and 24, both dependent from claim 16.

IV

In view of the above remarks, Applicants respectfully request that the Examiner withdraw this rejection.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment.

In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

---

[2] In their reply to the office action dated August 2, 2007, Applicants pointed out the differences between claim 16 and Guire. The Examiner appears to agree with Applicants' position as he does not assert any rejection of this claim relying on Guire.

The Petition for Extension of Time fee in the amount of $ 525 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges to Deposit Account No. 50-4189, referencing Attorney Docket No. 77101-002002.

Respectfully submitted,

Date: 9/15/08

Y. Jenny Chen, Ph.D., J.D.
Attorney for Applicants
Reg. No. 55,055

Customer No. 69713
Occhiuti Rohlicek & Tsao LLP
10 Fawcett Street
Cambridge, MA 02138
Telephone: (617) 500-2511
Facsimile: (617) 500-2499
51003.doc

Exhibit A

Research article summary:

Measurement of urinary 11-dehydro-thromboxane B2 excretion in dogs with gastric dilatation-volvulus.

Full Abstract

OBJECTIVE:
To measure 11-dehydro-thromboxane B2 (11-dTXB2) in urine of healthy control dogs, dogs undergoing ovariohysterectomy, and dogs with gastric dilatation-volvulus (GDV) and assess the relationship between urinary 11-dTXB2 concentrations in dogs with GDV and postoperative outcomes.

SAMPLE POPULATION:
Urine samples from 15 nonsurgical control dogs, 12 surgical control dogs, and 32 dogs with GVD.

PROCEDURE:
Urine samples were obtained from healthy pet dogs (ie, nonsurgical control dogs), dogs undergoing ovariohysterectomy at anesthetic induction and 1 hour following surgery (ie, surgical control dogs), and dogs with GDV at hospital admission and 1 hour following surgical derotation of the stomach (ie, GDV dogs). Urinary 11-dTXB2 concentrations were determined with an ELISA and normalized to urinary creatinine (Cr) concentrations by calculation of the 11-dTXB2 -to-Cr ratio. Differences in median 11-dTXB2 -to-Cr ratios among dogs and before and after surgery were analyzed.

RESULTS:
Urinary 11-dTXB2-to-Cr ratios did not differ between nonsurgical control dogs and surgical control dogs before or after surgery. Urinary 11-dTXB2-to-Cr ratios were significantly higher in GDV dogs at the time of hospital admission and 1 hour after surgery, compared with those of nonsurgical control dogs. Postoperative urine samples from GDV dogs had significantly higher 11-dTXB2-to-Cr ratios than postoperative urine samples from surgical control dogs. Median urinary 11-dTXB2-to-Cr ratios increased significantly in GDV dogs that developed postoperative complications.

CONCLUSIONS AND CLINICAL RELEVANCE:
Urinary 11-dTXB2 concentration is increased in GDV dogs at the time of hospital admission and after surgical derotation of the stomach, compared with that of healthy dogs. An increased urinary 11-dTXB2-to-Cr ratio following surgery is associated with an increased incidence of postoperative complications in dogs with GDV.

Author information

First Name	LastName	Initials
Wendy I	Baltzer	WI
Maureen A	McMichael	MA
Craig G	Ruaux	CG
Laura	Noaker	L

Jörg M Steiner JM
David A Williams DA

Affiliation: Department of Small Animal Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX 77843-4474, USA.

Grants:

Journal and publication information

Publication Type: Comparative Study; Journal Article

Journal: American journal of veterinary research (Am J Vet Res).

Reference: 2006-Jan; vol 67 (issue 1) : pp 78-83

Language: eng

PMID: 16426215 (status: MEDLINE) (last retrieval date: 12/14/2007)

External Links for this article (including full text providers, if available):

For links to sites providing the full text of this article and related topics see **links**. Note there may be a subscription or fee required for access to the full text. See our FAQ for information on finding FREE full text articles.

MeSH headings (categories)

This article was linked to the MESH Headings shown below.

- **Animals**
- **Dog Diseases** - surgery; urine
- **Dogs**
- **Female**
- **Gastric Dilatation** - urine; veterinary
- **Gastric Dilatation** - urine; veterinary
- **Hysterectomy** - veterinary
- **Ovariectomy** - veterinary
- **Stomach Volvulus** - urine; veterinary
- **Thromboxane B2** - analogs & derivatives; urine

Associated Chemicals: Thromboxane B2 (54397-85-2) ; 11-dehydro-thromboxane B2 (67910-12-7)

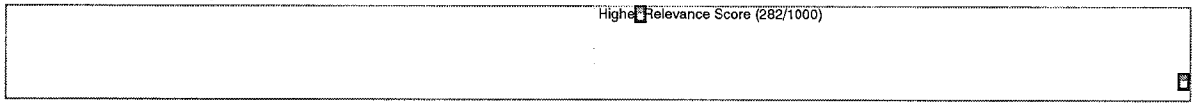
Related articles

These are the highest related articles currently in the database:

- Insulin resistance as a determinant of platelet activation in obese women. 17 Dec 2006
- Effect of low dose antioxidant vitamin and trace element supplementation on the urinary concentrations of thromboxane and prostacyclin metabolites. 29 Sep 2007
- Thromboxane-dependent CD40 ligand release in type 2 diabetes mellitus. 15 Jan 2006
- Determinants of platelet activation in Alzheimer's disease. 27 Feb 2007
- Gastric dilatation-volvulus as complication after surgical removal of a splenic haemangiosarcoma in a dog. 30 Aug 2006
- Gastric ulceration subsequent to partial invagination of the stomach in a dog with gastric dilatation-volvulus. 13 Jun 2006
- Evaluation of laser Doppler flowmetry for measurement of capillary blood flow in the stomach wall of dogs during gastric dilatation-volvulus. 30 Jan 2006
- Human pharmacology of naproxen sodium. 30 Jul 2007
- Celecoxib, ibuprofen, and the antiplatelet effect of aspirin in patients with osteoarthritis and ischemic heart disease. 30 Aug 2006
- Relation between atherosclerosis risk factors and aspirin resistance in a primary prevention population. 13 Sep 2006

See **100+ related articles**.

Related Article Map



Legend: - FREE Full text Article. - Abstract only. - Title only. More help.

See a **large map of 100+ related articles.**

1/15/2006 9/29/2007

Lower Relevance Score (219/1000)